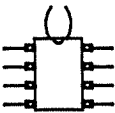


# South Bay Users Group

Contents Copyright SBUG 1986



## DYNAMIC MEMORIES

SEPTEMBER

88

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LOOK PAY ATTENTION \*\* The next SBUG meeting will be held at the Saratoga library. The meeting dates will be as follows: September 13th, October 11th and November eighth.

The time of our meetings is constant // 19:15, otherwise known as seven fifteen P.M.

COMING EVENTS: Chris Oman will present us to Gem. Gem has the possibility of being the most important of the computer interfaces, so don't miss this if you wish to avoid computer illiteracy.

\*\*\*\*\*

MEMBERSHIP

If you wish to become a member of SBUG and start receiving our newsletter DYNAMIC MEMORIES then send a \$20 check or money order to the following address:

SOUTH BAY USERS' GROUP  
P.O. BOX 60116  
Sunnyvale, CA 94088

Or come to one of our meetings.. We also .perpetrate a bulletin board to which you will have access as a member of SBUG.



COMPUTER HISTORY

## SBUG STEERING COMMITTEE

TITLE	NAME	USERNAME	PHONE
Chairman:	Chris Oman	OMAN	(408) 985-9460
Treasurer:	Henry Schulze	HENRY	(408) 866-5731
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Librarian:	Frank Gottschalk	FRANK	(415) 651-2313
Sysops:	Wright Huntley	WRIGHT	
	Jim Gonsalves		(408) 241-9347
Technik:	Frank Vanslager		(408) 257-3647

OTHER KEY INDIVIDUALS    Cover designer: Wright Huntley

Host computer:    SBUG                    ALL                    (408) 249-8259

If the need arises feel free to give anyone of us a call.

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## THE EDITOR'S BYTES AND BITES

Networking continues to be big news in the computer specialized magazines. Is it really that big a thing? In certain types of offices I am sure it is. On the other hand, how many of the members of this club have ever had any reason, chance, opportunity to use a networked computer?

The magazines have a tendency to kowtow to big business even though it is their millions of readers and not their hundreds of businesses that permit them to flourish. In my business, and I suspect in hundreds of others, maybe thousands, we would be much, but very much more efficient if we had a scanner and could fax (by computer/modem) information to and from the local here and the home office.

Alas, the home office doesn't have a computer and is extremely unlikely to get one. It would be cost effective but they're just not interested. As far as businesses go, computers are far from having made the penetration they will have 20 years from now.

All of this means that computer stocks are still a good investment. Many of the small and medium sized businesses that still shy away from computers as something rare and exotic will be using them as run of the mill tools in the next 20 years. I can still remember when the yokels guffawed at a car stuck in the mud and shouted, "Get a horse." The same sort of people now get a kick out of "computer error" and "The computer is down."

SBUG Financial Statement  
August 20, 1988

Receipts:	August	Y-T-Date	% Used	Budget
Members dues	40.00	180.00	22.50%	800.00
Disk Library	0.00	95.00	63.33%	150.00
Load80	0.00	40.00	13.33%	300.00
Documentation	0.00	0.00	0.00%	25.00
Interest	3.00	26.79 *	107.16%	25.00
Miscellaneous	0.00	60.00	30.00%	200.00
Total Receipts	43.00	401.79	26.79%	1500.00

## Disbursements:

Phone	7.58	88.29	58.86%	150.00
Utilities	0.00	0.00	0.00%	120.00
Printing	0.00	0.00	0.00%	100.00
Postage	0.00	72.00	55.38%	130.00
P O Box	0.00	39.00	134.48%	29.00
Bank charges	5.00	5.00	20.83%	24.00
Disk Library	0.00	0.00	0.00%	120.00
Documentation	0.00	0.00	0.00%	50.00
Load80 Subscription	0.00	0.00	0.00%	150.00
SBUG BBS Repairs	0.00	0.00	0.00%	100.00
Misc. Expenses	0.00	69.00	55.20%	125.00
Total Disbursements	12.58	273.29	24.89%	1098.00
Beginning Cash Balance	798.10	700.02	103.86%	674.02
Net Receipts	30.42	128.50	31.97%	402.00
Ending Balance	828.52	828.52	77.00%	1076.02

\*This amount includes \$2.17 received in 1987 but posted in 1988.

=====

FOR SALE!

-----

VENTEL 1200 Baud External Modem -- \$45.00. With manual.

RACAL-VADIC 1200 Baud Internal Modem. Like new, in original carton, with software and manual. Hayes-compatible -- \$50.00.

HERCULES PLUS Graphics Card. In original box, with software and manual \$150.00. Compare at Fry's for \$199.00.

Call HENRY at 379-9474 for further information. Evenings after 5 p.m. or leave a message on my Answering Machine.

MORE THAN YOU EVER WANTED TO KNOW  
ABOUT WORD PERFECT 5.0

As you can see by the elegant columns we (you may take that as an editorial or a royal we, it don't make me no nix-nox-nix) are beginning to take advantage of the possibilities of Word Perfect. Just to let you see how it works, I will also include graphics.

I would like to know what you think of the presentation in columns. If you don't like it, just let out a loud hiss when next you see me at the club meeting. A majority of hisses will convince me to go back to the old style. I'll let you know my opinion in the next issue of DYNAMIC MEMORIES.

I also intend to include some graphics. As a matter of fact if I run out of things to say I might just put out a newsletter with nothing but graphics.

Aside from getting used to the fancy (and rather difficult to manage) features of Word Perfect I have at present one problem that I've spent quite a bit of time on and haven't yet been able to solve.

Word Perfect has a setup so that one may define different page sizes. (These are listed on the following page.) Unfortunately I get a "not available" answer when I try to go beyond 8.5" wide. I have played a symphony of variations

on this theme and haven't been able to solve it. Of course I am writing to my friend Ms. Olsen of Custom Support (I have nothing against letting a woman support me). I am sure that she and I will be pen pals soon, more than that we will exchange Christmas cards for years to come.

As things stand have to keep Electric Pencils on my hard disk just for those occasions when I have to write something more than 8.5 inches wide.

I said I had one problem. I wish. For a while I was tootling along using IBM Proprinter in Word Perfect and on my Epson. Suddenly the words-running-together syndrome returned.

I have found that I must first tell the document that it will be printed by Standard Printer and then go to IBM Proprinter to take advantage of the things that Standard Printer won't do. Word Perfect sent me a fix for this annoying hang up but the fix doesn't work.

I don't think that's so great and it's something that WP Corporation will certainly have to fix in the future.

Altogether Word Perfect 5.0 is definitely hard to learn even taking into consideration that I have worked with it for some time. However, is there any-

hing this powerful that is easy to learn? I doubt it. Power brings problems, power brings complexity.

The previous page featured newspaper, or snaking columns

1. Standard
2. Standard Landscape
3. Legal
4. Legal Landscape
5. Envelope
6. Half Sheet
7. US Government
8. A4
9. A4 Landscape
0. Other

The above was set up in parallel columns. Once you've practiced a time or two it's easy. There may be as many as 24 columns on a page. The information given above is about the page sizes available. But not to me, as I said earlier. It really gripes my goiter that there should be so many facilities and that I have so much trouble in using them.

Word Perfect made a classic mistake in setting up its printer drivers. A sketchy perusal reveals that they are heavily slanted towards the corporation buyers, i.e., the people who use laser printers. I know that Standard Oil buys 2000 copies of a program at a crack, but I also know that there are millions of us slobs out here.

Referring to this WP decision I may say that I am not always convinced of corporate wisdom. If any of us made a boo-boo

I am sure that your cleverness obviates the necessity of an explanation now that you have seen the example. Below we have an example of parallel columns. These are very handy and fairly easy to set up.

(8.5" x 11")  
 (11" x 8.5")  
 (8.5" x 14")  
 (14" x 8.5")  
 (9.5" x 4")  
 (5.5" x 8.5")  
 (8" x 11")  
 (210m x 297m)  
 (297m x 210m)

like the Edsel, we would be hiking down the road to the strains of "Hit the Road, Jack". For that trifling error MacNamara was made head of the World Bank.

Last month I printed a page from a Wp. file that was kind of messy. At the time I presumed that WP was responsible for the messiness. Well, they were and they weren't. It can be printed out properly but it takes a lot of finagling. They don't give you any finagling information.

Because it shows the power of Word Perfect, I am printing it on the following page. It's really tricky to get right, but the results are more than impressive.

Many of the little details may seem unimportant, but they really dress a document up and help to hold the reader.

IMPROVED PARALLEL COLUMNS

Parallel columns now extend past a page break. Script writers and others will find this feature to be especially convenient.

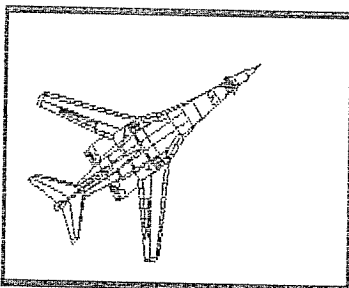
MASTER DOCUMENTS

The master document feature combines files (e.g., chapters in a book, files on a network) for generating tables of contents, etc.

This paragraph is printed in 8 LPI. We can place this in eight lines per inch by going into Shift F8 and using fixed line height. The rest of the document's line height is fixed at 6 LPI. Already the worlds most powerful word processor, WordPerfect continues its tradition of excellence by adding several new features.

INTEGRATED  
TEXT AND  
GRAPHICS

The smooth integration of text and graphics in WordPerfect 5.0 makes designing newsletters, reports, and professional documents much easier. A graphic image can be scaled, moved, and rotated. You can also indicate the style and thickness of the border, and include a caption. The graphic image can be placed anywhere on the page,

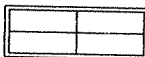
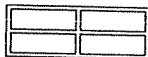
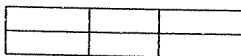


inserted in a line, tied to a paragraph, or included in a header or footer. The program also is shipped with a utility that allows you to capture the screen from any graphics program, converting it to a WordPerfect

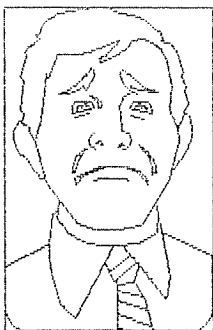
Graphics image file. You can then use the image within WordPerfect. This facilitates the use of various graphics programs to create graphics to be used within WordPerfect.

<sup>1</sup> WordPerfect is the number 1 selling word processor in the U.S., in Canada, and in six European countries. Research estimates now show that Wordperfect sales account for approximately 40% of the market share for word processors.

Here is a test of line draw, single, double and mixed:



As always I am using the 3 manual approach to WP. While I was completing my manual library I got into a conversation with the clerk at Computer Literacy. He is a WP user and very well informed. He told me that I am not alone



2 MONTHS WITH  
WORD PERFECT

in my problems, and that Word Perfect has had some of the gloss rubbed off its corporate image. I know that it is because of the graphics that WP 5.0 is so printer specific. (But many desktop publishing programs are not that picky. However, when they turn the program loose on an unsuspecting world without a hint of what will happen to the poor soul running a Wonky printer from Swaziland and more, without taking measures to communicate with Swaziland and redress the problem, then they are looking for trouble.

The two manuals I got are excellent, especially the one recommended by the clerk at Computer Literacy, nevertheless there is a manual coming out from the same company that published my favorite manual for WP 4.2. I'll probably buy it. Don't think that I intend to make the 4 manual approach a standard. Word Perfect 5.0 is a special case.

#### SOME ODDS AND ENDS

Bernie Thompson and Chris Oman installed a 30 meg. hard disk for me. It gave some problems and kept Chris up until late at night getting it in order. In the process my 20 meg. hard disk got erased. Foolishly (sounds nicer than stupidly) I had not backed it up for some time. I had 3½ days of work on the newsletter on the disk.

It will also take me a solid 8 hours to get the apartment house data files up to date. All this month's data has gone. To top it off I have misplaced my Fastback disk and can't recover my backup disks. It surely looks as though this were my month to be stupid foolish. Weep for me.

I have an update to First Publisher. It seems to have a couple of minor but very useful features that the old one did not have. \$25.00 for the update. I will be waiting for the memberships' approval on this but I do miss the fonts that First Publisher has. Of course I will give you a review of the new First Publisher in the next newsletter..

It is nice to have 54 meg of memory available. Of course when I had four floppies working with the model 4 I thought I was hell on wheels and couldn't conceive of anything better.

I have also subscribed to Prodigy. This is a shopping cum



information service involving Sears others. Microsoft had a hand in writing the software. This is something else I will be giving you a report on next month. The concept is of a

city with the entrance through the lobby of a building. Following I will show you some of the screens with appropriate comments. (Appropriate to me, that is.)

#### PRODIGY SERVICE HIGHLIGHTS

1. Leading Indicators Fall.....and Rise
2. Check 22,000 Movie Titles in Movie Search
3. Your Daily Hello Hartford Column  
(Who could pass a day without saying hello! to Hartford--Ed.)
4. Keep Up-to-Date on Soap Operas (A Must--Ed.)
5. Animal Health Pet Insurance (Fido's long illness could break you--Ed.)
6. What's new at Wooden Spoon? (What indeed?--Ed.)

#### PRODIGY SERVICE MAINMAP

- |                |               |                |
|----------------|---------------|----------------|
| 1. Information | 3. Shopping I | 5. Shopping II |
| 2. Lifestyle   | 4. Finance    |                |

One might say that the thrust of the program is mercantile.

#### INFORMATION

##### CONSUMER

Product ratings and recommendations including appliances, autos electronics and food.

##### WEATHER

National weather map, regional forecasts, city forecasts and more.

##### SPORTS

Sports, scores, headlines, statistics and odds.

##### NEWSROOM

News headlines, news desk, local news and winning state lottery numbers.

##### BUSINESS

Business headlines, industry news, market updates and stock quotes.

## LOBBY

As I said, I will be trying out this program as well this coming month. It has occurred to me that I might try bidding against Trump for any remain

news, market updates and stock quotes.

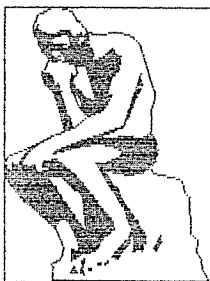
Helpful reference about the Service and about Prodigy Services.

ing New York real estate that he doesn't own. How about the statue of Liberty? I don't think he owns that yet.

## SOME GLEANINGS FROM THE MAGAZINES

Shall we start with Computer Shopper? It always surprises me that more members of our club don't read this magazine. It has excellent articles, some of them very much in depth, and as its name would indicate has a lot of bargains. Lately, however they seem to be concentrating on hardware. Software ads are not as common as they once were.

Let us start off with an article entitled Low Cost P.C. Power Computers. The article asks the question, Is Bigger Better? They might have added, --is faster better?



YOUR EDITOR

The article has a list of 17 XT computers. You may for example purchase from DEALER CONNECTION an XT88 Turbo with memory unspecified, 1 floppy drive, 150 W power supply, 8 slots, parallel and serial ports and monitor unsp-

ecified, AT keyboard, mono/color graphics card, software unspecified, and a one year warranty. These warranties always remind me of the Ginzus knife and its warranty for the life of the purchaser. A year and a half after they started in business they went into bankruptcy. Then again, think of Dell Computers who started off as a shoe string operation. They're amongst the top ten in the computer business now, and we're talking giants like IBM and Tandy.

The Computer Shopper continues with a list of 43 AT compatibles. Are you interested in an offering from Surrah Inc.? You're not? What a shame! A story like the success of Compaq or Dell will send men off to bed dreaming not of curvaceous femininity but of going head to head with IBM.

Computer Shopper is certainly on the mark with its idea that the average computer user doesn't need a power machine. A turbo XT with a 20 meg. HD and 640 K memory will suit most.

## OS/2 IS NOT FOR US?

The following is a letter, quoted in full from Computer Shoppers "Feedback Forum." As it is a letter from a reader I suppose the usual copyright laws do not apply. If they do, Computer Shopper will just have to sue me for everything I earn by editing DYNAMIC MEMORIES.

Dear Editor

I am writing to disagree with IBM's claim that OS/2 is the operating system of the future. Computer users are becoming more savvy and sophisticated, and many recognize OS/2 for what it really is; a clumsy, expensive behemoth.

Consider the real cost of OS/2. For PC, XT and compatible owners, an 80286 upgrade is mandatory. An add-in 80286 board is one option, but their cost and possible compatibility problems with OS/2 make this a dubious value at best. A replacement motherboard may present a more viable alternative for solving the compatibility problem, but these are not cheap, and they present more installation work than an add-in board.

Then there is the memory requirement. OS/2 requires 1.5MB of RAM just to run, and at least double that if you really want to do anything with it. This is a grossly unnecessary requirement for a personal computer operating system. If you want to multi-task, several major software packages (read If You Want To Use OS/2 The Way It Is Supposed To Be Used) you need at least 4 MB of RAM and a fast hard disk

for virtual memory swapping. Alas, this is not a good time to think about buying lots of memory, unless you are prepared to take out a second mortgage on the house. This will be another nail in the coffin for OS/2.

Of course you will want VGA graphics if you are going to take full advantage of all the wonderful OS/2 applications which are supposed to appear someday. (Real soon now? Ed.) Expect a register-level compatible VGA board and a multi-scanning monitor to set you back another \$800 or so.

If you don't have a 1.2 MB 5.25" floppy drive or a 3.5" drive then you had better get one, along with a corresponding controller card because these are the only two media formats available for OS/2

One could always junk present equipment and buy the latest-and-greatest, but what a waste it would be. I suspect that most intelligent people would not even consider this idea. It is almost sinful.

Now consider the cost of the real OS/2. I am talking about Version 1.1 with the nefarious

Presentation Manager. According to most sources, it is going to cost \$850; that is, when it finally does appear. I will be surprised if it ships as scheduled in October or November of this year.

I have not discussed the hidden costs, such as re-training and new software which is written specifically for OS/2. Nor have I mentioned the problems with OS/2's DOS compatibility window which is not as compatible as IBM and Microsoft would have us believe. For instance, it will use only up to 512K for running a DOS application, as opposed to the 640K recognized by DOS itself. It will not run any DOS-based communications software. Of course it will not allow multiple DOS applications to run concurrently, although users can do this now with the multitude of multi-tasking environments available for DOS.

My principle problem with OS/2 is a personal gripe. I cannot see the value of OS/2's graphical user interface. It is a tremendous waste of hardware resources. Why would anyone want to waste these heavy-duty hardware upgrades to run an operating system which gobbles up speed and memory for pretty graphics and icons? I don't believe that we are becoming such a nation of illiterates that we have to point to a picture with a mouse in order to execute an associated operating system command. A command line interface isn't really that bad! Let me stress again-

that this is only a personal opinion. Some people just love a graphics interface, icons and mice. I speak for those who think they are a waste, in this case a 1.5MB waste.

We cannot forget that OS/2 was written to take advantage of the 80286 microprocessor. Although it runs much better on an 80386, it does not exploit any 80386-specific features. However, Concurrent DOS/386, PC-MOS/386 and others are available now to take advantage of the 80386. If a user must have a graphics based interface, perhaps the Windows/386 environment would be a better choice than OS/2. Any of these options would be more cost-effective than OS/2.

It is evident OS/2 is not the operating system for the personal computer user. In fact, the OS/2 should have been named the "BS/2" for Business System 2 of course. It appears that IBM is trying to take the personal out of personal computing.

Richard M. Fincham  
McMurray, PA

Unless you read the puff pieces or the carefully written articles by editors who don't wish to sell their souls for a farthing and at the same time cannot afford to lose IBM advertising, all that has been written about OS/2 has been adverse. Certainly many people with \$850 to spend will buy an Atari, not an operating system.

As for myself, having no advertising to sell nor any soul

worth bargaining for, I can go either way.

## SOME ODDS-NOT MANY ENDS

Programs are getting cheaper--and more expensive. Computer Shopper has an article on a full fledged word processor (Easy Working Writer) for \$7.-50. You doubt me, variet? It even has a 100.000 word dictionary. As the author of the article says, this is not a toy. On the other hand we have the aforementioned OS/2 at \$8-00+ and now I give you TM/13.-0, a spreadsheet cum database integrated program which sells for \$795. It is represented in PC World as a Rubik's cube and sounds like it as well.

I will quote a little bit from the article about TM/13.0 written by Paul Lichtman in PC World. "TM/13.0 (the letters stand for Tables Manager) is a powerful, multidimensional data base with a spreadsheet front end you use to analyze, display and update data. Data is entered or imported into tables and is labeled by name--not by cell address.

--Although TM/1 is sometimes perceived as a stacked spreadsheet a la Boeing Calc it's closer to--but more powerful than--a program like VP PLANNER PLUS. You can define up to eight dimensions for any one table and work with up to 128 tables in any worksheet. Unlike most spreadsheets, TM/1 employs a virtual memory scheme that let's you use a table co-

ntaining up to 4 million cells or 32MB worth of data.

"For example, if the owners of a wholesale carpet business wanted to analyze 12 month's sales by carpet type--a two dimensional problem--they could easily do it with 1-2-3. But try to consolidate this kind of data from ten stores and you're up to 3 dimensions. How about cross referencing by major customers? You're another dimension. Want to add forecasts versus actuals? Even such commonplace business problems can make 1-2-3 look like a glorified abacus."

I guess if you need it it's worth \$795.00 I got interested in this kind of thing because I'm toying with the idea of going to an integrated program for my apartment house data. At present I use Reflex which is excellent but as a flat file program I have to keep my data in two separate programs. With a relational data base I could make it just one program and save a lot of typing time and key strokes. Whenever they tell me I have to learn a language to handle a program I cringe--and no one cringes better than I.

Computer Shopper has an ad for DBXL a DBase III for \$119.00 plus (as always) shipping and handling. Maybe. Maybe not.

## HARD DISK MANAGEMENT

by  
Dean Severns

With the low price of hard disks and the size of programs continually increasing, a hard disk for your IBM or compatible is almost a required item for your system. In this article I hope to show how to organize files on a hard disk for easier location and speed improvement.

I am not an expert on formatting hard disks (HD) so I will assume you already have a formatted HD with at least the Booting portion of DOS. This is the best place to start thinking about managing your HD. You may think that with all that space available it really doesn't matter how you do things. But, when that bytes available number starts to dwindle down it gets very difficult to start moving around those megabytes of files.

The first files we want to put on the HD are the ones we use the most; DOS. By putting all the DOS files in the DOS sub-directory before putting anything else on the HD will speed up access to the DOS command files. Don't forget to put the statement " PATH C:\DOS " in your AUTOEXEC file. Now the first rule to HD management is not to fill up the root directory with file names. When you type "DIR" it is much easier to find what you are looking for if you see this:

```

Volume in drive C is DOCS_SYSTEM
Directory of C:\
COMMAND  COM      25276   7-24-87  12:00a
DOS      <DIR>          3-29-88   1:15a
PROCOMM  <DIR>          7-28-88  12:37a
WINDOWS  <DIR>          6-28-88   3:16p
AUTOEXEC BAT      186   6-02-88   9:16p
TD        <DIR>          6-04-88   9:35p
HDM       <DIR>          3-29-88   1:36a
TEMPDIR   <DIR>          4-03-88  12:37a
CONFIG    SYS      127   7-20-88  11:41p
11 File(s)  1613824 bytes free

```

instead of the 8 megabytes of files that are stored on my HD. The effect is even more apparent on a larger HD such as my 20Mbyte.

```

Volume in drive D is DRIVE D
Directory of D:\
GAMES     <DIR>          10-26-87  10:14p
ASSEMBLER <DIR>          2-27-88   1:34p
WORKS     <DIR>          6-28-88   3:27p
QUICKC    <DIR>          5-31-88   6:35p
SYMPHONY  <DIR>          7-28-88  12:58a
123       <DIR>          10-27-87  11:40p
CCOMP     <DIR>          6-16-88   8:24p
WORDPERF  <DIR>          6-16-88   8:13p
TURBO     <DIR>          11-04-87   9:20p
CAD       <DIR>          2-12-88   8:27p
10 File(s)  3139584 bytes free

```

There is 17Mbytes shown in only ten subdirectories. These are the 'roots' of the directory tree, hence the term root directory. For example let's take a look at what grows from the CAD subdirectory on Drive D.

```

Volume in drive D is DRIVE D
Directory of D:\CAD
.           <DIR>      2-12-88   8:27p
..          <DIR>      2-12-88   8:27p
EPROM      <DIR>      7-28-88   1:29a
ORCAD       <DIR>      2-12-88   8:34p
PAINT       <DIR>      2-19-88  12:37a
ORCADVST    <DIR>      2-19-88  11:25p
6 File(s)   3137536 bytes free

```

Once again we have all subdirectories listed. Thus, if I needed to copy a file that was created with the program ORCAD, I would go to the CAD subdirectory that contained all my CAD programs. Then I would see the ORCAD subdirectory and go to there. Here I would see the program files, which is shortened to save space, and more subdirectories. Note that none of the files are named ORCAD. If the files had not been collected together there would be no way to tell what software package they belonged to.

```

Volume in drive D is DRIVE D
Directory of D:\CAD\ORCAD
.           <DIR>      2-12-88   8:34p
..          <DIR>      2-12-88   8:34p
ANNOTATE EXE 31488    1-08-88   1:56a
DRAFT EXE    94208    1-08-88   1:08a
ERC EXE      46464    1-08-88   1:59a
LIBEDIT EXE   98816    1-08-88   1:35a
CROSSREF EXE 35616    10-30-87   5:56p
PARTLIST EXE 40320    1-08-88   2:02a
PRINTALL EXE 37248    1-08-88   2:04a
DRIVER       <DIR>      2-12-88   8:36p
LIB          <DIR>      2-12-88   8:36p
SHEET       <DIR>      2-12-88   8:37p
MACRO       <DIR>      2-15-88  11:19p
24 File(s)   3137536 bytes free

```

The SHEET subdirectory looks like the most logical of the four and that is in fact where all my designs are stored automatically by ORCAD. I could then go to that subdirectory and if I have descriptive file names, good computing practice, I could easily find the file I was looking for. The same subdirectory tree structure is true for the entire disk. Any set of programs that fit into a category are placed on

a branch (subdirectory) of the tree all to themselves. This way anytime you are climbing the tree it is easy to pick which branch to follow to find the leaf (file) you are looking for. Next month we will cover a HD Menu program, the AUTOEXEC and CONFIG.SYS files.

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FIRST CLASS MAIL